71626 US02

**PATENT** 

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Shelton et al.

Serial No.:

10/796,176

**Group Art Unit:** 

Filed:

March 09, 2004

Examiner:

For:

LOW MOLECULAR WEIGHT CELLULOSE MIXED ESTERS AND THEIR USE

AS LOW VISCOSITY BINDERS AND MODIFIERS IN COATING

COMPOSITIONS

Mail Stop Amendment **Commissioner for Patents** P.O. Box 1450

Alexandria, VA 22313-1450

## TRANSMITTAL OF INFORMATION DISCLOSURE STATEMENT <u>UNDER 37 CFR 1.97(b)</u>

In accordance with 37 CFR 1.56, the documents listed on the attached Information Disclosure Statement by Applicant are being brought to the attention of the Examiner for consideration in connection with the examination of the above-identified patent application. Copies of the cited documents are enclosed.

An International Search Report in connection with the corresponding PCT application has been received. A copy is enclosed.

The Information Disclosure Statement submitted herewith is being filed within three months of the filing date of the application or date of entry into the national stage of an international application or before the mailing date of a first Office Action on the merits, whichever event occurs last.

Respectfully submitted.

Eastman Chemical Company

P.O. Box 511

Kingsport, Tennessee 37662

Phone:

(423) 229-4016

FAX:

(423) 229-1239

Michael K. Carrier Registration No. 42,391

2 May 2004

**CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)** 

I hereby certify that this paper (along with any paper(s) referred to as being attached or enclosed) is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Jo Ann White

| بخ<br>مور<br>مور         | Please type a plu | us (+) sign in this | box — | <b>+</b> |                      |      |                |   |  |
|--------------------------|-------------------|---------------------|-------|----------|----------------------|------|----------------|---|--|
| 1                        |                   | 1440                |       |          | Attorney Docket Num  | nber | 71626 US02     |   |  |
| Substitute for form 1449 |                   |                     |       |          | First Named Inventor |      | Shelton et al. |   |  |
| 1                        | INFORM.           | ATION D             | ISCL  | OSURE    | COMPLETE IF KNOWN    |      |                |   |  |
|                          | STATEM            | IENT BY             | APPI  | LICANT   | Application Number   | 10   | )/796,176      |   |  |
|                          |                   |                     |       |          | Filing Date          | Ma   | March 09, 2004 |   |  |
|                          |                   |                     |       |          | Group Art Unit       |      |                | - |  |
| 7                        | Sheet             | 1                   | of    | 4        | Examiner Name        |      |                |   |  |

| U.S. PATENT DOCUMENTS |              |           |                   |   |  |  |  |  |  |
|-----------------------|--------------|-----------|-------------------|---|--|--|--|--|--|
| Examiner Initials*    | Cite<br>No.1 |           | Code <sup>2</sup> | Name of Patentee or Applicant of Cited Document | Date of Publication of Cited<br>Document<br>MM-DD-YYYY |  |  |  |  |
|                       |              | 1,652,573 |                   | Mallabar  | 12-13-1927   |  |  |  |  |
|                       |              | 1,683,347 |                   | Gray et al.                                     | 09-04-1928   |  |  |  |  |
|                       |              | 1,878,954 |                   | Malm  | 09-20-1932   |  |  |  |  |
|                       |              | 2,129,052 |                   | Fordyce   | 09-06-1938   |  |  |  |  |
|                       |              | 2,801,239 |                   | Hiatt et al.                                    | 07-30-1957   |  |  |  |  |
|                       |              | 3,386,932 |                   | Steinmann                                       | 06-04-1968   |  |  |  |  |
|                       |              | 3,391,135 |                   | Ouno et al.                                     | 07-02-1968   |  |  |  |  |
|                       |              | 3,518,249 |                   | Hiatt et al.                                    | 06-30-1970   |  |  |  |  |
|                       |              | 4,415,734 |                   | Yabune et al.                                   | 11-15-1983   |  |  |  |  |
|                       |              | 4,532,177 |                   | Mahar   | 07-30-1985   |  |  |  |  |
|                       |              | 4,543,409 |                   | Diamantoglou et al.                             | 09-24-1985   |  |  |  |  |
|                       |              | 4,551,492 |                   | Aerts   | 11-05-1985   |  |  |  |  |
|                       |              | 4,983,730 |                   | Domeshek et al.                                 | 01-08-1991   |  |  |  |  |
|                       |              | 5,449,555 |                   | Karstens et al.                                 | 09-12-1995   |  |  |  |  |
|                       |              | 5,478,386 |                   | Itoh et al.                                     | 12-26-1995   |  |  |  |  |
|                       |              | 5,480,922 |                   | Mülhaupt et al.                                 | 01-02-1996   |  |  |  |  |
|                       |              | 5,663,310 |                   | Shimoda et al.                                  | 09-02-1997   |  |  |  |  |
|                       |              | 5,705,632 |                   | Shimoda et al.                                  | 01-06-1998   |  |  |  |  |
|                       |              | 5,720,803 |                   | Itoh et al.                                     | 02-24-1998   |  |  |  |  |
|                       |              | 5,856,468 |                   | Shuto et al.                                    | 01-05-1999   |  |  |  |  |
|                       |              | 5,914,309 |                   | Ulbl et al.                                     | 06-22-1999   |  |  |  |  |
| ·                     |              | 5,919,920 |                   | Murakami et al.                                 | 07-06-1999   |  |  |  |  |

| Examiner  | Date       |  |
|-----------|------------|--|
| Signature | Considered |  |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

| ı |   |
|---|---|
| 1 | _ |
| 1 | _ |

| Substitute for form 1449 |          |          |              |          |                | Attorney Docket Number 71                 |                |   | 71626 US0 | 71626 US02         |            |                              |                |
|--------------------------|----------|----------|--------------|----------|----------------|---|----------------|---|-----------|--------------------|------------|------------------------------|----------------|
|                          |          |          |              |          |                | First Named Inventor Shelton et al.       |                |   |           | l.                 | · - ·      |                              |                |
| INFORMATION DISCLOSURE   |          |          |              |          |                | COMPLETE IF KNOWN                         |                |   |           |                    |            |                              |                |
| STAT                     | EME      | ENT      | BY           | APP      | LICAN          | ſ   | App            | olication Number  | 10        | )/796,176          |            |                              |                |
|                          |          |          |              |          |                |   | Filir          | ng Date   | M         | arch 09, 2004      |            |                              |                |
| <del>.</del> .           |          |          | .,           |          | <del></del>    |   | Gro            | up Art Unit   |           |                    |            |                              |                |
| Sheet                    |          | 2        |              | of       | 4              |   | Exa            | miner Name  |           |                    |            |                              |                |
|                          |          |          | 5,962        | 2,677    |                |   | _              | Murakami et a   |           |                    |            | 10-05-1999                   |                |
|                          |          |          | 5,990        | ),304    |                |   |                | Kiyose et al.   |           |                    | T          | 11-23-1999                   |                |
|                          |          |          | 6,099        | 9,973    |                |   |                | Miyai et al.  |           |                    |            | 08-08-2000                   | ·              |
|                          |          |          | 6,207        | 7,601    |                | E   | 31             | Maurer et al.   |           |                    |            | 03-27-2001                   |                |
|                          |          |          | 6,303        | 3,670    |                | E   | 31             | Fujino et al.   |           |                    |            | 10-16-2001                   |                |
|                          |          |          | 6,407        | 7,224    |                | E   | 31             | Mironov et al.  |           |                    |            | 06-18-2002                   |                |
|                          | ļ        |          | 6,609        | 9,677    |                | E   | 32             | Seybold et al.  |           |                    |            | 08-26-2003                   |                |
|                          |          |          | 10/79        | 96,235   | ·-· ·          |   |                | Shelton et al.  |           |                    |            | 03-09-2004                   |                |
|                          |          |          |              |          |                |   |                | <u> </u>  |           |                    |            |                              |                |
|                          | <u> </u> |          |              |          |                |   |                |   |           |                    |            |                              |                |
|                          | ļ        |          |              |          |                |   |                |   |           |                    |            |                              |                |
|                          |          |          |              |          |                |   |                |   |           |                    |            |                              |                |
|                          |          |          |              |          | F              | OR  | EIGI           | N PATENT DOCU   | MEI       | NTS                |            |                              |                |
| Examiner                 | Cite     | Ţ        | For          | reign Pa | tent Docume    | nt  |                |   |           |                    |            | Date of Publication          |                |
| Initials*                | No.1     | Office   | <sup>3</sup> | Numbe    | r <sup>4</sup> |   |                | Code <sup>5</sup> Name of Patentee or Applicant of Cited Do nown) |           |                    | ment       | of Cited Document MM-DD-YYYY | T <sup>6</sup> |
| -                        |          | JP       | 5            | 51-119   | 088            |   | Asahi Dow K.K. |   |           |                    |            | 10-19-1976                   |                |
|                          |          | JP       | 5            | 51-119   | 089            |   | Asahi Dow K.K. |   |           |                    | 10-19-1976 |                              |                |
|                          |          | wo       | 9            | 91/163   | 56             |   |                | Eastman Ko  | dak       | Company            |            | 10-31-1991                   |                |
|                          |          |          |              |          |                |   |                |   |           |                    |            |                              |                |
|                          |          |          |              |          |                |   |                |   |           | <del></del>        |            |                              |                |
|                          |          |          |              |          |                | $\downarrow$                              |                |   |           |                    |            |                              |                |
|                          |          |          |              |          |                |   |                |   |           |                    |            |                              |                |
|                          |          |          |              |          | <u>-</u>       | $oxedsymbol{oxedsymbol{oxedsymbol{eta}}}$ |                |   |           |                    |            |                              |                |
|                          |          | <u> </u> |              |          |                |   |                |   |           |                    |            |                              |                |
|                          |          | <u> </u> |              |          |                |   |                |   |           |                    |            |                              |                |
|                          |          |          | -            |          |                |   |                |   |           |                    |            |                              |                |
| Examine<br>Signatu       |          |          |              |          |                |   |                |   |           | Date<br>Considered |            |                              |                |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

| Please | tyne a | nlus | (+) | sian ir | this    | hox |
|--------|--------|------|-----|---------|---------|-----|
| ricase | type a | pius | ι., | Signin  | 1 11113 | DUA |

Sheet

| Substitute for form 1440 | Attorney Docket Number | 9r 71626 US02  |  |  |  |
|--------------------------|------------------------|----------------|--|--|--|
| Substitute for form 1449 | First Named Inventor   | Shelton et al. |  |  |  |
| INFORMATION DISCLOSURE   | COMPLETE IF KNOWN      |                |  |  |  |
| STATEMENT BY APPLICANT   | Application Number     | 10/796,176     |  |  |  |
|                          | Filing Date            | March 09, 2004 |  |  |  |
|                          | Group Art Unit         |                |  |  |  |

**Examiner Name** 

|                       |  | OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS   |   |  |  |  |
|-----------------------|--|---|---|--|--|--|
| Examiner<br>Initials* | Initials* No.1 litem (book, magazine, journal, senal, symposium, catalog, etc.), date, pages(s), volume-issue number(s), publisher, city and/or country where published. |   |   |  |  |  |
|                       |  | Kirk-Othmer, Encyclopedia of Chemical Technology, Fourth Ed., vol. 5, pp. 496-529, 509 (1993), John Wiley & Sons, New York, New York  |   |  |  |  |
|                       |  | Nishimura, T.; Nakatsubo, F. "Chemical Synthesis of Cellulose Derivatives by a Convergent Synthetic Method and Several of Their Properites," Cellulose, 1997, 4, 109  | : |  |  |  |
|                       |  | Kawada, T.; Nakatsubo, F.; Murakami, K.; Sakuno, T. "Synthetic Studies of Cellulose IX: Reactivity and Cleavage of Three Kinds of Protective Groups of Synthesized Celloologosaccharide Derivatives," <i>Mokuzai Gakkaishi</i> , 1991, 37 (10), 930   |   |  |  |  |
|                       |  | Kawada, T.; Nakatsubo, F.; Umezawa, T.; Murakami, K.; Sakuno, T. "Synthetic Studies of Cellulose XII: First Chemical Synthesis of Cellooctaose Acetate," <i>Mokuzai Gakkaishi</i> , 1994, 40 (7), 738   |   |  |  |  |
|                       |  | "Characterization of Cellulose Esters by Solution-State and Solid-State Nuclear Magnetic Resonance Spectroscopy," Editors: T. J. Heinze and W. G. Glasser, Chapter 10 in the ACS Symposium Series 688 :Cellulose Derivatives - Modification, Characterization, and Nanostructures," Douglas W. Lowman, 131-162 (1998) |   |  |  |  |
|                       |  | Miyamoto, T.; Sato, Y.; Shibata, T.; Inagaki, H.; Tanahashi, M; <i>J. Polym. Sci., Polym. Chem. Ed.</i> , 1984, 22, 2363  | : |  |  |  |
|                       |  | Buchanan, C. M.; Hyatt, J. A.; Kelley, S. S.; Little, J. L.; <i>Macromolecules</i> , 1990, 23, 3747   |   |  |  |  |
|                       |  | Dickey, E. E.; Wolfrom, J. L., "A Polymer-Homologous Series of Sugar Acetates from the Acetolysis of Cellulose,: <i>J. Am. Chem. Soc.</i> , 1949, 825   |   |  |  |  |
|                       |  | Wolfrom, M. L.; Dacons, J. C., "The Polymer-Homologous Series of Oligosaccharides from Cellulose," <i>J. Am. Chem. Soc.</i> , 1952, 5331  |   |  |  |  |

| Examiner  | Date       |  |
|-----------|------------|--|
| Signature | Considered |  |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

| Please type a plus (+) sign in this box | $\rightarrow$ | + |  |
|---|---------------|---|--|
|---|---------------|---|--|

| ,                        | Please type | a pius ( | r) sign in this | JUOX . | <b>+</b>   |                        |     |                  |   |   |
|--------------------------|-------------|----------|-----------------|--------|------------|------------------------|-----|------------------|---|---|
| /                        | 2           |          |                 |        |            | Attorney Docket Number | er  | 71626 US02       |   | \ |
| Substitute for form 1449 |             |          |                 |        |            | First Named Inventor   |     | Shelton et al.   |   | _ |
| INFORMATION DISCLOSURE   |             |          |                 |        |            |                        | C   | OMPLETE IF KNOWN |   | _ |
|                          | STAT        | EME      | NT BY           | APPL   | LICANT     | Application Number     | 10  | /796,176         |   |   |
|                          |             |          |                 |        |            | Filing Date            | Ma  | arch 09, 2004    |   |   |
|                          |             |          |                 |        |            | Group Art Unit         |     |                  | _ |   |
|                          | Sheet       |          | 4               | of     | 4          | Examiner Name          |     |                  |   | / |
|                          |             |          | Resea           | rch D  | isclosure, | September 1978, 1      | 730 | 04, p 19         |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
|                          |             |          |                 |        |            |                        |     |                  |   |   |
| r                        |             |          |                 |        |            |                        |     |                  |   | - |

| Examiner  | Date       |   |
|-----------|------------|---|
| Signature | Considered | 1 |

<sup>\*</sup>EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>&</sup>lt;sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.